CLAIMS

What is claimed is:

1. A method comprising:

maintaining a data structure indicating for each of a plurality of resources an

5   allocated semaphore;

receiving a request to access a first resource from a first task;

after determining that the first resources is available: allocating a first semaphore,

and updating the data structure with the first resource and an indication of the first

semaphore; and

10   signaling to the first task that the first request is available.

2. The method of claim 1, wherein said determining that the first resource is

available includes checking the data structure for an indication of the first resource.

3. The method of claim 1, wherein maintaining the data structure further includes

maintaining a current access type for each of the plurality of resources.

15   4. The method of claim 4, wherein said determining that the first resource is

available includes finding an indication of the first resource and an associated current

access type of read in the data structure, and recognizing that the request corresponds to a

read request.

5. The method of claim 1, further comprising receiving a second request to access

20   the first resource from a second task; referencing the data structure to determine that the

first resource is currently not available, and signaling to the second task that the first

resource is not available.

6. The method of claim 1, further comprising receiving a second request to access the first resource from a second task; referencing the data structure to determine that the first resource is currently read-locked, recognizing that the second request corresponds to a read access request; and signaling to the second task that the first resource is available.

5   7. The method of claim 1, further comprising receiving a second request to access the first resource from a second task; referencing the data structure to determine that the first resource is currently read-locked, recognizing that the second request corresponds to a write access request; and signaling to the second task that the first resource is not available.

10   8. The method of claim 1, further comprising receiving a second request to access the first resource from a second task; referencing the data structure to determine that the first resource is currently write-locked, and signaling to the second task that the first resource is not available.

9. The method of claim 1, further comprising receiving a second request to access
15   the first resource from a second task, the second request including a request timeout value; referencing the data structure to determine that the first resource is currently not available, queuing the second request, the first task releasing the first resource within a timeframe corresponding to the timeout value, and signaling to the second task that the first resource is available.

20   10. The method of claim 1, further comprising receiving a second request to access the first resource from a second task, the second request including a request timeout value; referencing the data structure to determine that the first resource is currently not available, queuing the second request, expiring the second request based on the timeout value, and signaling to the second task that the first resource is not available.

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11. A computer-readable medium containing computer-executable instructions for performing the method of claim 1.

12. A computer-readable medium containing computer-executable instructions for:

5   maintaining a data structure indicating for each of a plurality of resources an allocated semaphore;

receiving a first request to access a resource;

after determining that the resource is available: allocating a first semaphore, and updating the data structure with the resource and an indication of the first semaphore;

10   receiving a second request to access the resource;

after determining whether or not that the first resource is available: allocating a second semaphore, and updating the data structure with the second semaphore.

13. The computer-readable medium of claim 12, containing further computer-executable instructions for updating, after receiving a release request for the

15   resource, the data structure to remove the indication of the first semaphore and to indicate that the resource is allocated with the second semaphore.

14. The computer-readable medium of claim 12, wherein the first and second requests correspond to read access requests to the resource.

15. The computer-readable medium of claim 12, wherein the first request

20   corresponds to a read access and the second request correspond to a write access request to the resource.

16. The computer-readable medium of claim 15, containing further computer-executable instructions for: receiving a third request from a task to access the resource, the third access corresponding to a read access request; updating the data structure with the resource and an indication of the third semaphore; and indicating to the task that read access is authorized.

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17. A dynamic semaphore management system comprising:

a communications mechanism to receive a request for access to a particular resource of a plurality of resources and to signal allowance or denial of access to the particular resource;

10   a plurality of semaphores; and

a semaphore manager to maintain a set of associations between the plurality of resources and the plurality of semaphores.

18. The dynamic semaphore management system of claim 17, wherein the semaphore manager includes a data structure to maintain the set of associations between

15   the plurality of resources and the plurality of semaphores.

19. The dynamic semaphore management system of claim 18, wherein the data structure includes a resource lock table and a semaphore table.

20. The dynamic semaphore management system of claim 17, wherein the semaphore manager includes an application programming interface.

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21. A dynamic semaphore management system comprising:

means for maintaining a set of associations between a plurality of resources and a plurality of semaphores;

means for receiving a request for access to a particular resource;

5   means for dynamically allocating a semaphore for the particular resource; and

means for signaling allowing or denying access to the particular resource.

22. The dynamic semaphore management system of claim 21, wherein said means for maintaining the set of associations includes means for maintaining a resource lock table and means for maintaining a semaphore table.

10   23. The dynamic semaphore management system of claim 21, further comprising means for dynamically de-allocating the semaphore.

24. The dynamic semaphore management system of claim 21, further comprising means for receiving a second request for the particular resource; and means for determining the availability of the particular request.

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